

Work Order ID 72053

Monday, July 18, 2011 2:23:08 PM



Page 1

Item ID: D2137

Accept



Setup Start



Revision ID:

Stop



Item Name: Decal - No Step

Start Date: 7/18/2011 Start Qty: 20.00



Cust Item ID:

Required Date: 7/20/2011 Req'd Qty: 20.00



Customer:

Reference:

Approvals:

Process Plan:

Date:

11-07-18

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run Start



Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

Draw Nbr

Revision Nbr

100

0.00



Purchasing

Memo

0.00

Purchasing

Issue P/O 14513
Make per Dwg 2137

11-07-18

110

0.00



Packaging

Receive & Inspect for Damage & Mat'l Certs

Memo

0.00

Packaging

11/7/22 (20)

120

0.00



QC

QC6- Inspect dimensions to drawing

Memo

0.00

Quality Control

11 07 22 (20)

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
| | | | | | | | |
| | | | | | | | |

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
|------|------|----------------------------------|-----------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
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NOTE: Date & initial all entries

Work Order ID 72053

Monday, July 18, 2011 2:23:09 PM



Page 2

Item ID: D2137

Accept



Setup Start



Revision ID:

Stop



Item Name: Decal - No Step

Start Date: 7/18/2011 Start Qty: 20.00



Cust Item ID:

Required Date: 7/20/2011 Req'd Qty: 20.00



Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

130

Identify as per dwg & Stock Location *Small fab* 0.00

Packaging

Memo

0.00

Packaging

11/7/22 *S* *Row*

140

QC21- Final Inspection - Work Order Release 0.00



QC

Memo

0.00

Quality Control

11/7/25 *JF**11-07-22* *20*

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
| | | | | | | | |
| | | | | | | | |

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
|------|------|----------------------------------|-----------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
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| | | | | | | | | |

NOTE: Date & initial all entries

Picklist Print

Monday, July 18, 2011 2:23:15 PM

Page 1

Work Order ID: 72053



Parent Item: D2137



Parent Item Name: Decal - No Step



Start Date: 7/18/2011

Required Date: 7/20/2011

Start Qty: 20.00

Required Qty: 20.00

Comments: IPP: B ☐ 02.02.01 ☐ Added step 3 and Inspection level 21 ☐ SM ☐

| Component Item ID/ Item Name | Replacement Item ID | Mfg/ Purch | Bin Item | Primary Location | Last Location | Route Seq ID | Unit of Measure | Qty on Hand | Qty per Kit | Total Qty | Qty Issued | Date Issued | Status |
|--|------------------------|---------------|-------------|---------------------|------------------|-----------------|--------------------|----------------|--|--------------|---------------|------------------------------|--------|
| D2137P  Decal - No Step | | Purchased | No | | | 100 | Each | 0.0000 | 1  | 20 | | <i>7/18/2011</i> <i>(20)</i> | |

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
| | | | | | | | |
| | | | | | | | |

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

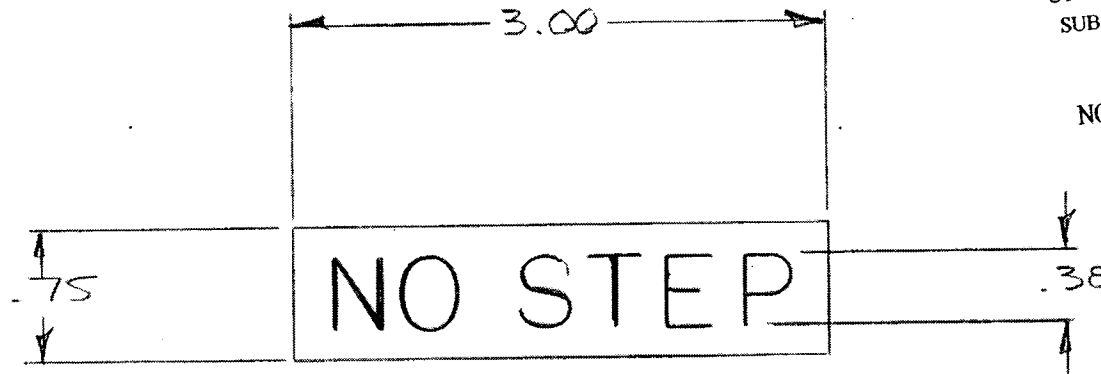
Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
|------|------|----------------------------------|-----------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
| | | | | | | | | |
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NOTE: Date & initial all entries

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 78053

pl 11-07-10



ALTERNATE MATERIAL:

3M 7 MIL MASKING FILM #8522CP

SILVER OR WHITE ON BLACK

off 00.09.05
CP 00.09.05

MATERIAL: 3M POLYESTER

NATURAL (SILVER OR
WHITE) ON BLACK.

.003 THICK



D 2137

| | | | | | | | | |
|---|--|--|--|---|------|--|----------|-------------|
| REVISION | | RIVET CODE SHALL BE PER NAS 523 | | PART NO. | ITEM | DESCRIPTION | MATERIAL | SPEC/VENDOR |
| DRAWN | | THIS DRAWING IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COMMUNICATED TO ANY OTHER PERSON WITHOUT THE PERMISSION OF DART AERO. | | CONTRACT NO. | | DART DART AERO ACCESSORIES INC. VANCOUVER CANADA | | |
| APPROVED | | BASIC CODE D=AMPLE D101=NO OF SHEETS C=COUNTERSINK | | DATE <i>June 29</i> 92 | | TITLE DECAL - NO STEP | | |
| DESCRIPTION OF CHANGE | | REQUIREMENTS - UNLESS OTHERWISE SPECIFIED GENERAL LIMITS 1. DIMENSIONS ARE IN INCHES 2. SURFACE ROUGHNESS 125.4 3. REMOVE SHARP EDGES .015 MAX 4. THREADS PER INCH - 5 - 3742 5. HOLES PER AND 10387 | | LENGTH DASH NO. W=SPOTWELD | | CODE D 2137 | | |
| | | 1. TOLERANCES - .005 MAX 2. ANGLES .010 3. PARALLELISM .0075 4. ECCENTRICITY .005 MAX 5. SYMMETRY ABOUT ALL W/C CENTRE LINES .005 | | BASIC CODES 8J=M20470AD 8B=M20420AD | | SCALE 1:1 SHT 1 OF 1 | | |
| REPORT ALL DISCREPANCIES - DO NOT SCALE | | | | | | | | |

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
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| | | | | | | | |

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
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| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
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NOTE: Date & initial all entries



Scotchcal™

Opaque Imaging Media 8522

Description

This media is specially formulated to dry quickly after printing. Production of outdoor weatherable and long-term indoor durable graphics is now easier than ever. Its changeable adhesive allows easy removal for up to one year.

Advantages

- Optimized for use with selected Epson Stylus Pro printers and Epson Archival inks.
- Optimized for use with selected HP DesignJet Printers and HP DesignJet Ink System UV or HP83UV Color Ink System
- For making opaque, laminated graphics that are outdoor weatherable and long-term indoor durable
- Media:
 - For opaque (reflective) graphics
 - Changeable, easy to remove from warranted substrates up to 1 year later
 - Dries quickly after printing so the overlamine can be applied almost immediately
 - Low slippage paper liner for superior tiling
- Overlaminates:
 - Provide additional UV (ultraviolet) and physical protection for making weatherable finished graphics
 - Available in luster and matte gloss
 - Adhesive allows for heat-assisted or cold-temperature lamination

Applications and Uses

3M™ Scotchcal™ Changeable Opaque Imaging Media 8522 is intended only for ink jet printing and for use with the listed Compatible Products and Equipment and the following applications. Any other application is NOT warranted by 3M or covered by the worldwide 3M™ MCS™ Warranty unless 3M gives its prior written approval for the application.

- First surface images (the image is on top of the film) for opaque posters and signs, including:
 - Graphics for vans, personal vehicles, trucks and buses
 - Novelty posters
 - Retail and point-of-purchase displays
 - Information graphics such as maps and directories
 - Entertainment promotions in museums, zoos, parks, theatres, sports venues
 - Education and presentation graphics

Product Bulletin 8522

Release F, Effective January 2003
Black bar in margin indicates a change

- Legal and courtroom exhibits
- For flat or simple curved surfaces, with or without rivets, used in vertical ($\pm 10^\circ$) applications

Limitations of End Uses

The following uses and applications are specifically NOT warranted.

- Fleet applications in areas that use salt for winter road maintenance
- Application to non-warranted substrates, including wall-board
- Applications subjected to gasoline vapors or spills
- Application to corrugated or highly irregular surfaces or sharply raised areas
- Graphics applied to stainless steel, including stainless steel vehicles
- On flat surfaces with rivets, tenting of 4 to 10 mm around rivets may be expected; rivets may be cut around to eliminate tenting.

Note: Standard ink jet technology is water based. Water-based chemistry is susceptible to the extremes of heat and humidity. This is a factor in most product constructions on the market. Read the Fabrication, Shelf Life and Storage sections in this bulletin. Staying in the middle of these ranges always provides optimum performance.

Compatible Products and Equipment

Thermal Ink Jet Printing Systems

- Epson Stylus Pro 9500, Stylus Pro 10000 printer
 - Epson Archival Inks
- Epson Stylus Pro 10600 printer
 - Epson Archival Inks
- HP DesignJet Printers 2000 and 3000 series
 - HP DesignJet Ink System UV (pigment-based ink)
- HP DesignJet Printers 5000 series
 - HP83UV Color Ink System

Overlaminates (required)

- 3M™ Luster Overlamine 8519 (semi-gloss)
- 3M™ Matte Overlamine 8520

Note: For the full product names of the 3M products listed on this page, please see page 1.

Warranted Substrates

Media 8522 is warranted for use on the following rigid substrates.

Some substrates may "out-gas", resulting in tiny bubbles throughout the surface of the graphic. For maximum performance, be sure the substrate you select is properly cleaned and prepared as recommended by the manufacturer. See Instruction Bulletin 5.1 for additional information.

- Alodine (anodized aluminum)
- Automotive panels (automotive painted steel)
- Fruehauf (painted aluminum)
- FRP (fiberglass reinforced plywood)
- Glass
- Imron® (polyurethane-painted metal panel)
- Acrylic
- Sintra™ board

Test and Approve Non-warranted Substrates Before Use

Media 8522 is not warranted for any substrate other than those listed above. If you want to use it for other substrates, 3M recommends that you test and approve the media for both adhesion and removal characteristics.

Characteristics

| Characteristic | Description |
|--------------------------------|--|
| Media | 7 mil, white, opaque graphic film |
| Liner | Low-slippage, lay flat paper |
| Adhesive | Changeable, pressure sensitive |
| Thickness (media and adhesive) | 7.5 to 8 mil (nominal) |
| Application substrates | See Warranted Substrates, above |
| Application surfaces | Flat or simple curved surfaces, with or without rivets, used in vertical ($\pm 10^\circ$) applications (no corrugations) |
| Application temperature range | 28° to 110°F (-2° to 43°C) (air and surface) |
| Roll sizes | 36" x 45 feet (914 mm x 13.5 m) 54" x 45 feet (1372 mm x 13.5 m) |

How to Become a 3M Ink Jet Registered Fabricator

Only 3M Thermal Ink Jet Registered Fabricators are eligible to offer 3M MCS warranted graphics. In order to become certified, a fabricator must complete the requirements as specified in the 3M Ink Jet Graphics Registered Fabricator Reference Manual located on the 3M website at www.scotchprint.com

Effective Performance Life

To obtain the warranty given below, the graphics must be made according to 3M's recommendations which are detailed in the Warranty and Limited Remedies on page 3. Also see the section, Removability.

Warranted Durability

| Media 8522 with Overlaminate 8519 or 8520 | Epson Printers | | HP Printers | |
|---|----------------|---------|-------------|---------|
| | Outdoor | Indoor | Outdoor | Indoor |
| Applied to Warranted Substrates | 2 years | 5 years | 3 years | 5 years |

Removability

Imaging media 8522 is removable from warranted substrates for 1 year without the aid of chemical strippers or accessories. Refer to Instruction Bulletin 4.23 for additional information.

Fabrication

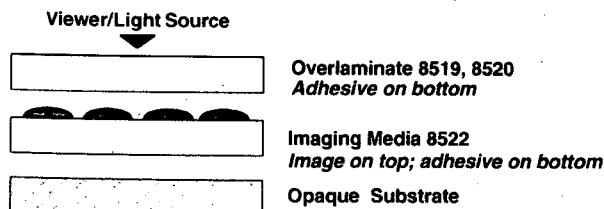
Graphics must be made according to 3M's recommendations which are detailed in the Warranty and Limited Remedies on page 3.

See Instruction Bulletin 4.23 for detailed fabrication, printing and mounting information.

Graphic Construction Options

Opaque (Reflective) Graphics

Opaque graphics made with imaging media 8522 require an overlaminate and an opaque substrate.




Note: For the full product names of the 3M products listed on this page, please see page 1.

Shelf Life and Storage

- 3M™ Scotchcal™ Changeable Opaque Imaging Media 8522 has a shelf life of one year.
- Storage conditions (new and partially used rolls). For optimum performance, use the middle of these ranges:
 - Original packaging, including plastic wrap
 - Relative humidity of 20% to 80%
 - Temperature of 33° to 104°F (0° to 40°C)
 - Away from direct sunlight
- Do not stack unprotected rolls or lay sharp or heavy objects on them.

Health and Safety

 **Caution**

When handling any chemical products, read the manufacturers' container labels and the Material Safety Data Sheets (MSDS) for important health, safety and environmental information.

To obtain MSDS sheets for 3M products:

- By fax, call 1-800-364-0768 in the US and Canada or 1-650-556-8417 for all other locations.
- Electronically, visit us at <http://www.3M.com/msds>.
- By mail, or in case of an emergency, call 1-800-364-3577 or 1-651-737-6501.

When using any equipment, always follow the manufacturers' instructions for safe operation.

Warranty and Limited Remedies

3M™ MCS™ Warranty for Graphics Produced on HP DesignJet Printers and Epson Stylus Pro Printers

The following is made in lieu of all other express or implied warranties, including any implied warranty of merchantability or fitness for a particular purpose: We warrant graphics produced by a 3M Ink Jet Registered Fabricator made with imaging media 8522, printed on an approved HP thermal ink jet printer according to HP's recommendations or Epson Stylus Pro printer according to Epson's recommendations, overlaminated with 8519 or 8520, and applied to a Warranted Substrate according to 3M's recommendations. These



Commercial Graphics Division

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Technical Info, 1-800-328-3908
Fax 1-651-736-4233

Fax on-Demand 1-800-364-0768 1 S/Canada or 1-651-732-6506 International
Fax-on-Demand document: 4506
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Fax 519-452-6245

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México, D.F. 01210
52-55-52-70-04-00
Fax 52-55-52-70-22-77

3M Puerto Rico, Inc.

Puerto Rico Industrial Park
P.O. Box 100
Carolina, PR 00986-0100
787-620-3000
Fax 787-750-3035

graphics are covered against failure caused by ultraviolet light, temperature extremes, pollution, and other elements.

If a graphic fails to perform in accordance with 3M product specifications within this time frame, 3M will replace the materials at no charge. **These remedies are exclusive. In no case shall 3M be liable for any direct, indirect, or consequential damages, including any labor charges.**

3M Related Literature

Listed below is related 3M technical literature that may be of interest. You may view and print these Bulletins from our Web site at www.scotchprint.com, or order them via our Fax-on-Demand (FOD) system. Call one of these phone numbers to order the desired bulletins, and specify the FOD document number provided in the chart.

United States or Canada: 1-800-364-0768
International: 1-651-732-6506

| Subject | Bulletin No. | FOD No. |
|--|--------------|---------|
| Product Bulletins | | |
| 3M™ Scotchcal™ Overlamine 8519 and 8520 | 8519/8520 | 4524 |
| Instruction Bulletins | | |
| Making thermal ink jet graphics | 4.23 | 6523 |
| Application, substrate selection, preparation and substrate-specific application techniques | 5.1 | 7001 |
| Warranties | | |
| Worldwide 3M™ MCS™ Warranty Packet (includes all Commercial Graphics MCS Warranties) | | 9503 |
| Worldwide 3M™ MCS™ Warranty Overview-Folder | | 9504 |

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HP and DesignJet are trademarks of Hewlett Packard.
Sintra is a trademark of Swiss Aluminum Ltd.
Intron is a registered trademark of DuPont in the United States

Bulletin Change Summary

The Epson Stylus Pro Printers 9500, 10000 10600, and Epson Archival Inks have been added to this bulletin. Additional changes resulting from this addition are marked with black bars in the margin.